Sustainable and Holistic Approach of Waste Management of temples of Mathura and Vrindavan through Social Entrepreneurship and Green Temple Initiatives

SYNOPSIS

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IN

APPLIED BUSINESS ECONOMICS

Submitted by

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1. INTRODUCTION

The topic of solid waste management (SWM) has been attracting global attention for years, largely due to its ability to drive the stability of a safe, healthy, green and clean economy. The experiences of many developed countries and emerging global trends have seen a huge increase in waste production due to population growth, urbanization, rapid economic growth, rising societal standards and changes in consumption policies. India produces 150000 metric tons of solid waste per day according to 2019 India Today report. India is facing a sharp gap between the rising waste generation rate and the scarcity of resources and services.

Waste management is a complex issue today, and the modes of operation for transporting and processing waste vary widely between cities, countries, and continents. However, efforts have been made to break down the problem and create a framework that divides the management of a wide range of waste into a hierarchical system. This system seeks to cover the entire life cycle of a product and captures maximum benefit from any waste. Thus, waste management types are generally divided into three categories, the now popular 3 Rs based on reducing, reusing and recycling. Unfortunately, however, this concept only targets the best practice waste management systems by providing guidance on the ideal ways in which waste can be reused for minimal impact on the environment. Of course, there is waste that cannot be processed using this program and for some waste products, the blockage is very frequent.

Waste is unwanted or useless material; waste includes all the items that people have no use any longer and which they either intend to get rid of or have already discarded. Waste gets generated from each and every activity of humans, which eventually degrades the quality of human health and accelerates the environmental degradation at an alarming rate. Are discarded substantial products of human activities that are regarded as unwanted or useless? Waste are substances or objects which are disposed or are intended to be disposed or are required to be disposed of by the provisions of national laws. Accumulation of solid waste in open areas leads to breeding ground for insects and vectors such as rats and mice that leads to severe health hazards. Apart from linkage to public health, accumulated solid waste result in an eyesore, diminishes real estate and properly value. It also causes odor nuisance, reflects the unorganized nature of

the community, and creates a poor environment for growing children. Improper disposal of solid waste in open areas and landfills causes contamination of soil, surface water, ground water and generates toxic and green-house gases that negatively impact the living conditions of human being as well as the overall environment. It results in spread of communicable and non- communicable diseases among human being and animals. However, use of adequate information, recourses, and efficient management practices can turn solid waste into a useful resource.

Apart from leading to various environmental issues, the waste also leads to number of problems in economically developing nations, as they are facing challenges in treating the waste generated. India is a developing country and is facing waste disposal crisis, but solutions are not impending since, it is being realized that waste can be used in industrial processes and also for the generation of energy appropriate waste management is being explored. Therefore, it is generally understood that proper waste management helps to protect health, environment and also preserves natural resources.

1.1 TEMPLE WASTE

Temple waste is a waste which is generated in temples and religious areas. People worship God and are accustomed to go to the temples offering flowers, fruits, sweets and coconuts etc. the bulk of flowers, leave of different plants, milk, and curd and coconut shells are piled up and then disposed of exclusively in water bodies. Everyday flowers are offered by devotees in temples and are left unused.

Every year 80,000,000 tons of temple waste was poured into rivers killing fish and other living creatures, wreaking havoc on the delicate environment, and resulting in massive water pollution. Pesticides and fertilizers also flow into water, posing a serious danger to the citizen's lives (ASK-EHS, 2019)

GREEN TEMPLE INITIATIVE

In 2014 The Green Temple initiative was launched by Alliance of Religious and Conservation (ARC) GPN and Bhumi Project to develop a network for environmentally conscious temples across India. Green guideline for worship places is given by The Alliance of Religious and Conservation (ARC) and the Bhumi Project. ARC is an international secular NGO that supports the world's major faiths in developing environmental programs based on their core teaching, beliefs and practice. The Bhumi Project, based in

Oxford, UK, works in partnership with all members of the international Hindu family to encourage Hindus worldwide in the care and protection of Mother Earth.

Green guide line for worship places is waste management, energy efficiency, awareness and education, water conservation, green landscape. Religious waste management is a significant part of sustainable development for any country even for the integration with global economy in a country like India.

It is expected that Green Temple initiative will

- Create a network of sustainable and earth friendly temples across India.
- Join existing network of international green places of worship.
- Encourage the sharing of best practice between temples sites in India and with those around the world.
- Create a theological basis for environmental actions.
- Encourage Hindu Temples to work with government agencies, NGOs and private companies to make their holy places more environmentally friendly.
- Create practical action plan for promoting sustainability and care for the Earth.
- Share stories, wisdom and tradition.

1.2 Social Entrepreneurship

Social entrepreneurship is the process of doing business for a philanthropic cause. Social enterprises seek to maximize profits while growing their positive impact on a particular social issue. These organizations are legal businesses that make money. However, much like a charity or non-profit, social enterprises focuses most on benefiting society. Social entrepreneurship is a broad term that includes many different types of organizations. There are four common types of social entrepreneurship

1. Cooperatives – a cooperative is a business that exists to benefit its members by meeting their social, economic, and cultural needs, such as community grocery stores and credit unions.
2. Social firms- social firm are businesses that provide employment opportunities to groups of people who face significant disadvantages in the labor market, such as the disabled.

3. Socially responsible companies are business that conducts day to day operations in line with a social mission. For example, outdoors brand Patagonia creates repairable products from socially responsible sources.
4. For- Profit Business with a social impact- This type of social entrepreneurship refers to profit-focused business that support social causes through donations and raising awareness for example glasses brand Nearby Parker donates glasses and other health supplies to those in needs.

Social entrepreneurship has been proved as an appropriate solution in a country like India where economy is facing grass root problem like unemployment, per capita income which can resolved by social entrepreneurship combined solving the problem of waste management without additional investment.

1.3 Profile of Mathura City

Mathura is full of stories of Krishna, his birth and parts of his life with Radha Rani. Mathura Bhoomi starts at Kotvan near Hodel, 95 km from Delhi and ends at Runkta, which is famous for its affiliation with Poet Surdas, a devotee of Krishna. Long rows of picturesque ghats - waterfalls, arched gates and temple spires that stretch on the right bank of the river Yamuna, emphasize the sacred feature of the city of Mathura. The birthplace of Lord Krishna, "the most famous, best and most complex of the manifestations of Vishnu": Mathura Today, one of the most important shrines before the arrival of the Buddha, the place where Mathura was located is called Surasena. In Buddhist literature, Mathura is called Madhura. It was also known as Mathera. Mathura is a prosperous city and the capital of a large area. A Buddhist center was established at Mathura during the Mauryan dynasty. The center has been around for a few centuries. Emperor Ashoka built several Buddha stupas at Mathura on the banks of the Yamuna. Emperor Kanishka and his descendants built many Buddhist stupas and statues in the 1st century BC. At this time Mathura was the largest city in North India and the capital city for the region for administration. The present city of Vrindavan during this period was a dense jungle uninhabited. In the early 5th century AD, the Chinese traveler Er Fahion visited twenty monasteries (Buddhist monasteries) and three thousand Buddhist priests in Mathura. By the middle of the 6th century AD, Buddhism began to decline in the Mathura region. Many Buddhist relics have been found in the Mathura area. Many of these are in the museums of Mathura, Calcutta and Lucknow. In this

research most popular temples of Mathura and Vrindavan which generate maximum religious waste will be covered. 10 most visited temples of Mathura and Vrindavan are selected for research purpose these temples are being selected through the official website of Nagar Nigam Mathura Vrindavan, and also by conducting personal interview of official of Nagar Nigam Mathura Vrindavan.

1. Iskon Temple
2. Govind Dev temple
3. Madan Mohan Temple
4. Radha Damodar Temple
5. Sewa Kunj
6. Rang Nath ji Temple
7. Shri Banke Bihari Temple
8. Shri Krishna Janam Bhoomi
9. Dwarkadhish Temple
10. NidhiVan

1.4 Availability of data

Detaile of temple waste					
Sr. no	ward	Temple	waste genrated		
			Flowers & Garlands	Kitchen waste	dry waste
1	62	Goteswar Temple govind nagar	110	15	2
2	62	Bhoteswar Temple	125	20	3
3	62	Shree Krishna Janmbhoomi	....	100	50
3	48	Dwarikadhish temple	250	10	20
4	49	Nannd Mahal temple	30	5	10
5	49	Gopeswar temple	75	...	5
6	69	Shree Radha Sneh Bihari temple	10	....	5
7	70	Shree Banke Bihari ji temple	150	.....	80
8	70	Shree Radha Ballabh temple	10	20	8
9	70	Shree Radha Damodar temple	15	20	10

Figure 1. Detaile of Temple waste (Source: Nagar Nigam Mathura Vrindavan)

Figure 1 shows the data of total religious waste generated in these temples on daily basis in Kgs in year 2021

2. REVIEW OF LITERATURE

Table 1. International and National Reviews

➢ **International Reviews**					
S.n	**Title /Year**	**Author**	**Objective**	**Research Methodology**	**Findings**
1**.**	Methodology for proposing and planning solid waste management in a religious city: case of Varanasi (2021)	Vikas Kumar	Aim of study is to formulate an integrated methodology for proposing and planning sustainable Solid Waste Management (SWM) plan for a religious City Varanasi.	Study is based on primary data, primary data is collected by conducting survey such as Household surveys for waste generation Waste compositions on the festival and stakeholder's (Funding agency, planning agency, waste managing agency) surveys related to Waste Management in Varanasi	Study concluded that current solid waste management system in Varanasi had the scope of improvement and finding the gaps and inefficiency in the SWM plan is a difficult task compounded with the dynamism of a religious city. Also compare the current SWM with different other possible SWM plans, it also estimates cost, land required, environment friendliness, informal workers analysis, and participation. It also provides the rankings of different SWM plans by using multi-criterion decision analysis.
2.	Temple Floral waste utilization – A case of Bhubaneswar. (2019)	Shrestha Daa, Shreyash Subudhy	Study aims at reviewing the temple floral waste utilization.	International journal for research in Engineering application and management.	The waste from the temple is neglected and remains untreated for long this negligence cause harm to the aquatic animals of the water bodies.

3.	Social innovation practices in sustainable waste management: case study of successful social enterprises of Ahmadabad. (2019)	Nageswara Rao Ambati	Objective of the study is to investigate how waste management social entrepreneurs develop and integrate social innovations successfully and also to explore the nature of social innovation integration of social enterprises in addressing environmental issues	The study adopted a qualitative case study approach and recognized successful social enterprises which are working in waste management in the city of Ahmadabad, Gujarat using purposive sampling.	In the study three concepts were identified as being very important for the success of selected social enterprises. they are as follows- Technological knowledge for creating solutions, Relentless social innovating, Social entrepreneurial passion.
4.	Study on Municipal solid waste management and challenges faced in Indian Metropolitan Cities. (2019)	Geeta Mishra, Mitali Yadav	Objective of the study is to study existing practices related to various solid waste management initiatives taken and challenges faced in managing municipal solid waste.	Study is descriptive in nature data is presented in graphs.	Study concluded that Solid waste management has been a major issue since decades in the cities and the situation continue to aggravate with time due to continuous development and increase in population. In order to make the cities livable sustainable management of waste is needed. There should be community mobilization to sensitize them towards their contribution in waste management, increase in the better infrastructure for the MSW management, sanitary and

					monitored landfill sites and also waste to energy technologies to be promoted.
5	Management of municipal solid waste in religious tourism park based on Reduce, Reuse, and Recovery: An Indonesian attraction case study. (2019)	Kasam Kasam, Fajri Mulya Iresha	This study aims to plan solid waste management system in the religious tourism park in Indonesia, especially in Gunungpring park tomb.	Study is based on primary data and data is presented in the form of pictures, pie charts and graphs	Study concluded that Based on the amount of waste per capita in the religious tourism object of Gunungpring tomb park is 0.14 kg / person / day with an average volume of 0.32 Liter / person / day. According to recyclability, the waste composition in Gunungpring tomb park is 49.84 % recyclable, 29.53 % compostable, and 20.63 % of residue discharged to Pasuruhan landfill In Muntilan sub district.
6	Studying the Municipal solid waste management system in Meerut city, Uttar Pradesh (2019)	Usha Rani, B. W. Pandey	The purpose of the paper is to analyses the status of municipal solid waste in Meerut city.	Data was collected by primary survey from different organizations Out of total municipal wards, 250 respondents from different income groups have taken into account in order to know the ground realities and their perception. Observation method and	The socio-economic conditions play an important role in waste composition and generation. Mixed waste is reaching at landfill sites as the residents throw garbage improperly without segregation. For achieving healthy, hygienic and live able environment and sustainability

				discussion was conducted with the Meerut Nagar Nigam officials. The processing of collected data was done through tabulation, mapping and graphical representation by work like line, bar graphs, flow charts and pie diagrams.	in the Meerut city, municipal waste processing should be technically sound, financially viable, eco-friendly.
7	Solid waste management: A prerequisite for achieving sustainable development goals (2019)	Rinnie Mahajan	Study aims to interlink 17 SDGs with Solid waste management	Study is theoretical in nature	The study interlinks all the 17 SDGs with solid waste management and SDG 6 Clean water and Sanitation in particular.
8	Municipal solid waste management study and strategy in Aligarh City (2018)	Harit Priyadarshi, Ashish Jain	Objective of the study is to overview present status of integrated Municipal solid waste management of Aligarh City.	For achieving the objectives household survey is conducted in Aligarh city, in order to assess the present integrated solid waste Management practices such as waste generation and disposal by household, performing of Aligarh Municipal Corporation (Nagar Nigam Aligarh), Awareness and concern of local population on integrated solid waste management.	The findings of the study shows that the Municipal Solid Waste generated in Aligarh city depends upon the population, climate, uncontrolled urbanization, socio-economic condition. The entire city is suffering due to acute waste management problem, it is concluded that the present policy and infrastructures are inadequate in dealing with the enormous quantity of MSW generated in the city. MSWM in

					Aligarh city is unsatisfactory and thereby needs immediate attention.
9	A study of social entrepreneurship in India. (2018)	Tripda Raval	The study aims to underline the role and responsibilities of social entrepreneurs in India, and to study overall contribution of social entrepreneurship in India and challenges faced by them.	The study is descriptive in nature and based on secondary data, secondary data is collected from books of social entrepreneurship, published report of government bodies and reports of some industries.	The study concluded that social entrepreneurship has the capacity to socially innovate these innovations has creative answers to these problems. Social entrepreneurship is subjected to challenges in India and those challenges can be overcome by roper planning and measures.
10	Understanding the Municipal Solid Waste Management in Religious places of India: case study of Shirdi (2018)	Priyanka Mokale	The study aims to seeing the overall picture of Shirdi Solid waste management system, awareness among people regarding solid waste management and its current situation.	The study used both primary and secondary data primary data is collected by survey and observation method and secondary data is collected by journals websites.	Study find that private contractors are doing the whole things of Shirdi SWM like all the steps from collection to disposal. They daily collect waste by SMC vehicle by ward wise as well in market places, hotels. They keep separate dustbin for dry and wet waste. During observation it is found that they keep a separate dustbin for veg wet waste on daily basis 2 tons of veg waste they are giving to Sai Sansthan for their bio gas plant.

11	Recent scenarios of Solid waste management in India (2017)	Abhishek Nandan, Bikarama Prasad Yadav, Soumyadeep Baksi, Debajyoti Bose	Objective of the study is to study about current status of municipal solid waste management in different regions of India.	The study is descriptive in nature, it is based on secondary data, it is presented in the form of tables	Public involvement in management of solid waste is of significant importance. Authorities must protect fundamental right of citizens by implementing best practices and citizens must perform fundamental duties by their contribution to those practices
12	Challenges and opportunities associated with waste management in India. (2017)	Sunil Kumar, Stephen.R. Smith, Geoff Fewlor	Study aims at reviewing the challenges, barriers and opportunities associated with improving waste management in India.	No data were generated from the work; all supporting data were obtained from previously published work available.	Study concluded that India relies on inadequate waste infrastructure the informal sector and waste dumping there are major issues associated with public participation in waste management and there is generally a lack of responsibility towards waste in the community. There is a need to cultivate community awareness and change the attitude of people towards waste as this is fundamental to developing proper and sustainable waste management system. Sustainable and economically

					viable waste management must ensure maximum resources extraction from waste, combine with waste disposal of residual waste through the development of engineered landfill and waste-to-energy facilities India faces challenges related to waste policy, waste technology selection and the availability of appropriately 0trained people in the waste management sector
13.	Estimation of Biomass productivity of epigenic earthworm species euripus Eugenia fed with temples flower waste and cow dung mixtures. (2016)	S. Jeevendran, M Nandhivarman Muthu	The present study deals with analysis of temple flower waste mixed with different ratios of cow dung composted by the earthworm Eudrilids' eugenia To assess their growth rate and zoomass gain.		Study found that highest increase in the biomass was found in the reactors with 100% cow dung, while 25% flower waste + 75% cow dung appears to be the best option for the temples.
13	Social entrepreneurship in waste management: Surabaya's experience (2015)	Tauran, Maruf, M. Farid Suyatno	The study aims to discuss the practice of social Entrepreneurship in the waste bank activity in Surabaya city and reveal its potential for social and	The study is based on both primary and secondary data primary data is collected by interviews and observations, location of the study is	Study found that social entrepreneur's activity on waste bank Surabaya can provide additional family income encouraged the emergence of innovation and

			economic empowerment for urban community.	Jambangan and Kebraon village, Surabaya. For the analysis of the data interaction modal data analysis is used.	creative community, increasing social capital for the community This paper also reviews the important factors that determine the appearance of social entrepreneurship in urban communities.
14	Waste management in the context of sustainable development case study in Romania (2015)	Monica Izvercian**,** Larisa Ivascu		Study uses data for the period of 2003 to 2011. Data is presented in the form of tables and graphs.	Study concluded that evolution of information technology sector shows a decrease in costs and an improvement of the indicators relatively to pollution. Certainly, the structural funds are a cornerstone in improving situation in Romania and optimization of Municipal Solid Waste (MSW)and also concluded that there is a need for a well implemented strategies in Romania.
15	Social entrepreneurship in India: an exploratory study (2015)	Hemant Kumar.P. Bulsara, Shalesh Gandhi, Jyoti chandvani	study aim to study the growing trends of social entrepreneurship in India and new initiatives taken by social entrepreneurs in India	study is descriptive in nature	Study tells about possible reasons for a gradual shift towards Social Entrepreneurship and how it is the way to future.

16	Solid waste management and social entrepreneurship-A key to sustainable development. (2014)	Divyash arora, Swadesin Mahapatra	Study aims at discussing solid waste management of Paamal Municipality region.		According to the study Dumping is a major issue considering the effective waste generated from a locality per day. The segregation is best way to manage waste. The segregation waste management has a lot of potential and scope for entrepreneurship
17	Solid waste management and characteristics in Lucknow, Uttar Pradesh, India (2013)	Rahul Charles Francis, L.P. Singh, Earnest Vinay Prakash	Objectives of the study are to determine the quantitative and qualitative characteristics of Solid waste along with basic information and to create GIS maps for Lucknow city.	The primary data were collected directly from concerned offices, research institutions like universities and NGOs. The statistical analyses were carried out on waste composition, quantity and population density variables and results are drawn in the form of percentage, mean, range and standard deviation. Data are presented in tables and diagrams (pie diagrams, bar diagrams)	Findings of the study shows that segregation of waste at source and promotion of recycling or reuse of segregated materials reduces the quantity of waste and the burden on landfills, and provides raw materials for manufacturers. The composition of MSW shows mostly organic matter (45.3%), so composting is a good method for the treatment and production of soil amendment.
18	waste management and economic growth (2008)	Lee Yuen Hee	Article aim at throwing light on relationship between waste management and economic growth.	Article	Singapore is highly conscious of the environmental pitfalls of industrialization and, since the early days of

					industrialization, had developed its own integrated approach to environmental protection and management with the aim of ensuring that industrial development was not at the expense of the living environment. The key strategies are prevention, enforcement and monitoring. In addition, public awareness and education programs are conducted to educate the public on the protection of the environment.
➢ **National Reviews**					
19	Solid Waste Management in Urban India: Imperatives for improvements (2020)	Satpal Singh	Objective of the study is to discuss state of solid waste management in India	Study is based on secondary data and data is presented in the forms of tables and charts.	This paper discusses the state of solid waste management in India, and give recommendations to solve the challenges and concluded that community awareness and a change in people attitude towards solid and their disposal can go in a long way in improving the India's Solid Waste Management System (SWM).

20	Quantification of the temple waste of Jaipur City. (2018)	Isha Yadav, Shweta Singh	Objective of the study is to find out sustainable ways to manage the solid waste and quantification of temple waste of ten popular temples of Jaipur City.	Recent trends in Agriculture, Food Science, Forestry, Horticulture, Aquaculture, Animal Science, Biodiversity, Ecological Science, and climate change	It is concluded from the study that no proper waste management system in any of the selected temples in fact the waste generated is either thrown in road side or disposed of in water bodies.
21	Assessment of the status of municipal solid waste management (MSWM) in Lucknow-Capital city of Uttar Pradesh India. (2014)	Archana, Daoud Ali, Mohammad Yunus, V. Dutta	Study aims at studying current status of Municipal Solid Waste management of Lucknow.	Primary data is collected by conducting a survey, survey has been conducted during 2010 to 2012 to study 24 MSW dumping sites AND 26 depot locations of Lucknow.	The study concludes that the present policy and infrastructure are inadequate in dealing with the enormous quantity of MSW generated in the city. MSWM of the city is unsatisfactory and thereby needs immediate attention. Increase in quantities of MSW due to rapid urbanization, commercialization and inability of providing daily collection service cause nuisance and health hazards. The waste management plan also needs significant cooperation of public in source segregation from the residential sector.
22	Municipal solid waste management challenges and health risk	Abhimanyu Singh, Jamshed Zaidi, Divya Bajpai,	This paper emphasizes the waste characteristics, adverse	The study is based on both primary and secondary data; data is presented	findings from this study indicates failure of the existing facilities due to apathy,

	problematic solutions at Agra city, U.P. India. (2014)	Gunjan Sharma, Amita Yadav, Dheerendra S. Chauhan and Shree Ganesh	environmental impacts, health risks, poor waste management practices and also problems associated with the solid waste management system at the municipal level	in the form of tables, charts and graphs.	high volume of waste generation, inadequate collection space, delayed sanctioning of new landfill sites and a number of open-dump sites which generate fires. An assessment of the public perception indicated that most people lack knowledge of the harmful effects of waste heaps including the fact that they are breeding grounds for flies, cockroaches, and mosquitoes and also large numbers of rodents which are responsible for transmission of germs and zoonotic infections to sanitary workers, rag-picking children as well as people living nearby.
23	Status of Municipal Solid Waste Management in Gwalior City.	Sh. S. Sures, Zonal Officer	Studies were taken up to assess the contamination status in and around the Municipal Solid Waste dump sites at Gwalior.	Report of Central pollution control board Central Zonal office of Bhopal	It is estimated that 280 MTD of solid waste is generated in the city through street sweeping and from the communal waste storage sites. Out of that only 200 MTD is collected and accepted by processing plant and rest is collected on another day.

					recommended to involve more vehicles per day to collect the rest of the waste 80 MTD to have more amount of waste to convert in compost, to improve the plantation inside the plant premises, to stop and prevent open burning of tree leaves and other waste by sweepers on the roadside and direct them to take all the waste to the communal waste storage bins/sites only.

4. NEED OF THE STUDY

India is a religious country Indian people do not perform any activity without Muhurat for every occasion they like to visit temples and offer flowers, incense sticks, diyas etc. In India religious waste is being generated from cradle to grave of people whether it their birth ceremony, marriage ceremony or death ceremony People like to visit to temples. India is also famous for its different festivals in a single year many festivals are celebrated, devotees visit temples in a very large number for instance on Krishna Janmashtami lakhs of devotees visit Lord Shri Krishna Temples specially on Shri Krishna Janmabhoomi the birth place of Lord Shri Krishna and Shri Banke Bihari Mandir situated in Mathura city of Uttar Pradesh another occasion is Holi on this occasion devotees gathered in a very large numbers to offer prayers these devotees offer flowers in a very large quantity and the priests throw colors and flowers on the devotees in many temples it is being played by flowers too not only this but there are some other festivals or occasions on which a very large quantity of religious waste is being generated.

When it comes to religious waste its disposal is not easy because of religious sentiments of people attached to it therefore people throw waste in rivers like Ganga and Yamuna which pollute the river at the same time

religion waste is also not being used which may be recycled to make incense stick, Herbal Gulal or colors and perfumes which will generate revenue, provide employment and more valuable organic products, and a new business case. This will help in sustainable development too.

5. RESEARCH GAP

- No study so far provided a business model for religious waste management through social entrepreneurship.
- Mathura is a birth place of Lord Shri Krishna due to which large number of devotees visit every day in these temples which results in the generation of a huge amount of religious waste during an interview of Sanitation cell expert of Nagar Nigam Mathura Vrindavan it is found that aggregate of 10 temples generate approx. 1880 kg of religious waste on daily basis which requires a due consideration, through green initiative which is not done yet it will be done
- Apart from that it will also construct a business model of religious waste management through Social Entrepreneurship which will contribute significantly in employment generation for downtrodden people with the sustainable solution of religious waste.

5. OBJECTIVES

1. To explore the existing waste management system of Mathura and Vrindavan and part of religious waste.
2. To know the existing waste management system of Mathura and Vrindavan temples and its environmental impact.
3. To find the gap between existing waste management system of Mathura and Vrindavan and green temple initiative.
4. To suggest strategies regarding the waste management to temples, devotees and administration.
5. To suggest the business model of social entrepreneurship for religious waste of temples of Mathura and Vrindavan.

6. HYPOTHESES OF THE STUDY

Hypothesis 01- There is no contribution of Social Entrepreneurship at Employment level in India.

Hypothesis 02- There is no effect of Social Entrepreneurship on employment generation in Religious Waste management of Mathura and Vrindavan temples.

Hypothesis 03- There is no significant relationship between religious waste management and improved environment.

Hypothesis 04- There is no significant relationship between Religion waste management of Mathura and Vrindavan temples and green temples initiatives.

7. RESEARCH METHODOLOGY

- **Research design adopted**

Research will be exploratory in nature

- **Duration of the study**

For the study researcher will use the data from 2016 onwards. On the basis of availability of data.

Table 2. Variables of the study

S.no	Dependent Variables	Independent Variables
1	Employment generation	Social entrepreneurship
2	Improved environment	waste management
3	Green temple initiative	Temple waste management

Table 3. Methodology

s.no	Objective	Data collection method	Tools of analysis
1.	To explore the existing waste management system of Mathura and Vrindavan and part of religious waste.	This objective will be fulfilled by using both primary and secondary data primary data will be collected by taking interviews of authorities. And secondary data from official website of Mathura Nagar Nigam, research paper and relevant books.	Appropriate statistical tool will be used.
2.	To know the existing Waste Management System of Mathura and Vrindavan Temples and its environmental impact.	Primary data will be collected by executing self-structured questionnaire, Schedule and interviews of officials of Nagar Nigam Mathura Vrindavan. And secondary	ANOVA-Analysis of Variance, Correlation and regression.

		information from newspaper, and official website of Nagar Nigam Mathura Vrindavan.	
3.	To find the gap between existing waste management system of Mathura and Vrindavan and green temple initiative.	Both primary and secondary data.	ANOVA -Analysis of Variance and other appropriate statistical tools may be used
4.	To suggest the strategies regarding the waste management to temples, devotees and administration.	Researcher own work	Appropriate statistical tool will be used.
5.	To suggest the business model of social entrepreneurship for religious waste of temples of Mathura and Vrindavan.	Researcher own work	Appropriate statistical tool will be used

Data collection

Primary data – Primary data will be collected by visiting Nagar Nigam Mathura Vrindavan, waste processing Plant in Mathura, Temples of Mathura and Vrindavan, NGOs which are working in the area of religious waste management or their utilization. Observation method, interview method, schedule and questionnaire will be used for the collection of primary data.

Secondary data -secondary data will be collected from official website of Nagar Nigam Mathura Vrindavan, journals, Magazines, newspaper etc.

PROPOSED CHAPTER PLAN

Chapter 1- Waste management of Mathura city.

- An overview
- Review of literature

Chapter 2- Research design and Methodology

Chapter 3- Overview of waste management of Mathura and Vrindavan Temples.

Chapter4- Data Analysis, Results and Findings

Chapter 5- Conclusion and suggestions

REFERENCES

- Ambati, N. R. (DECEMBER 2019). Social Innovation Practices In Sustainable Waste. *INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH* .
- arora, D., & Mahapatra, S. (2014). SOLID WASTE MANAGEMENT & SOCIAL ENTREPRENEURSHIP - A key to sustainable development . *International Journal on Applied Bioengineering* .
- Ashish R. Mishra, S. A. (2014). SOLID WASTE MANAGEMENT - CASE STUDY. *International Journal of Research in Advent Technology* .
- Dr. Vijayakumar, A. a. (2013). Women entrepreneurship in India : emerging issues and challenges. *international Journal of Development Research* .
- Francis, R. c., & Singh, l. (November-2013). Solid Waste Management and Characteristics in Lucknow, Uttar Pradesh, India. *International Journal of Scientific & Engineering Research* .
- Hee, L. Y. (2008, june). waste management and economic growth. *world cities Summit issue* .
- Hemant kumar P. Bulsara, S. G. (2015). social entrepreneurship in India : An exploratory study . *International journal of innovatin* .
- kasam, K., & Iresha, F. M. (2019). Management of municipal solid waste in religious park based on Reduce, Reuse, Recovery: An Indonesian attraction case study.

  Khera, P. (2018, September). “Closing Gender Gaps in India: Does Increasing Womens’ Access to Finance Help?”. *IMF working paper* , p. 212.
- kumar, v. (2021). Methodology for Proposing and Planning Solid Waste Management in a Religious City: Case of Varanasi . *International Journal of Innovative Science and Research Technology* .
- M. Farid Ma’ruf, T. (2015). Social Entrepreneurship in Waste Management:.

- Mahajan, R. (2019). SOLID WASTE MANAGEMENT: A PREREQUISITE FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS IN INDIA. *International journal of research and analytial Reviews* .
- Monica Izvercian, L. I. (2015). Waste management in the context of sustainable development: Case study in Roma. *Procedia Economics and Finance* .
- Nandan, A., yadav, B. P., bakshi, s., & Bose, D. (2017). resent scenarios of solid waste management in India.
- Priyadarshi, H., & Jain, A. (May 2018 |). "Municipal Solid Waste Management Study And Strategy In Aligarh City, Uttar Pradesh India". *International Journal of Engineering Science Invention (IJESI)* , PP 29-40.
- rani, U., & pandey, B. (2019). STUDYING THE MUNICIPAL SOLID WASTE MANAGEMENT SYSTEM IN MEERUT CITY, UTTAR PRADESH. *General of global resources* , 58-63.
- Rao, G. S. (2016). status of women entrepreneurship in India. *INTERNATIONAL JOURNAL OFMULTIDISCIPLINARYEDUCATIONALRESEARCH* .